



## AAR-100

### Human Factors Newsletter # 00-06

(March 11, 2000 – March 24, 2000)

- **DSAR1:** The first Decision Support Automation Research study (DSAR1) is conducting dress rehearsal shakedowns. The first two controllers for the study started their participation last week. During the first week of their two-week participation in the project, the controllers received training on the generic center airspace and automation tools used during the study. Dr. Mica Endsley joined human factors researchers at the William J. Hughes Technical Center to instruct experimenters on the administration of the Situation Awareness Global Assessment Technique (SAGAT). SAGAT, a computer-based assessment technique, is one of the instruments used to evaluate the impact of automation on controller performance and behavior. DSAR1 will run for nine weeks with a total of 16 participants from En Route Centers throughout the Continental United States. (B. Willems, WJHTC)
- **STARS:** Standard Terminal Automation Replacement System (STARS) Human Factors researchers from the William J. Hughes Technical Center supported a week-long meeting of the STARS Air Traffic Computer-Human Interface (CHI) working group. Researchers provided human factors expertise to the group and developed prototypes to help the group make informed decisions. The topics discussed included additional font sizes for the Terminal Controller Workstation and the size of the Display Control Bar. The group also reviewed issues identified by the sites where the Early Display Configuration version of STARS is currently operational. (T. Yuditsky, K. Allendoerfer, WJHTC)
- **Human Factors Briefings:** Three members of the Eurocontrol Experimental Center received briefings and demonstrations of NAS Human Factors Branch projects in the William J. Hughes Technical Center's Research Development and Human Factors Laboratory and in the Integration and Interoperability Facility. They were particularly interested in the Decision Support Automation Research project. (M. McNulty, WJHTC)
- **AT-SAT:** A researcher from the Civil Aeromedical Institute (CAMI), traveled to Baltimore, MD, to participate in an evaluation of Air Traffic Selection and Training (AT-SAT) on Prometric's computer system at their quality control laboratory. The CAMI

representative, along with representatives from AHR, ATX, and HumRRO, evaluated the test to ensure that it appears and functions as originally designed. Beta testing of AT-SAT will take place at some of Prometric's testing sites once any issues raised during the current evaluation have been addressed. (M. Heil, CAMI)

- **Runway Incursions:** A CAMI representative traveled to San Jose, CA and Los Angeles, CA, to participate in meetings with representatives from NASA-Ames who are studying runway incursions. Attendees assisted in developing the plan for a human factors proof-of-concept study to analyze LAX incursion data used in support of the National Runway Safety Program. They also conferred with LAX management representatives about the project and visited the LAX facility. (J. Pounds, CAMI)
- **CWS Analysis Method:** A CAMI representative traveled to the William J. Hughes Technical Center in Atlantic City, NJ, to participate in a meeting with researchers to discuss current and future research projects which will test the Cochran-Weiss-Shanteau (CWS) analysis method in high fidelity simulators. Following an overall briefing on the development of CWS as an index for ATC performance, potential applications for Technical Center projects were explored and developed. A workday with the CWS project team was also held. (J. Pounds, CAMI)
- **NTSB Investigation Participation:** A CAMI researcher traveled to Dallas, TX, to participate in an NTSB investigation of the Southwest Airlines Flight 1455 runway overrun. CAMI was asked to participate in the investigation as a member of the Human Performance Team, along with a representative from the NTSB, Southwest Airlines Pilots Association (SWPA) and Southwest Airlines. Initial witness interviews were completed. The NTSB is currently reviewing summaries of those interviews before taking future action. (K. Williams, CAMI)
- **Electronic Flight Bag (EFB):** Volpe Center staff and Battelle contractor staff attended a meeting of the Air Transport Association Digital Data Working Group in Denver, CO. They obtained airline and industry feedback on the structure, scope, and content of the first draft of the *Human Factors Design Considerations for Electronic Flight Bags (EFBs)* document. This document will be used by the FAA to create policy for the approval of EFBs, and by users and designers to develop EFBs. It addresses three basic EFB functions: electronic documents, electronic checklists, and performance calculations. An updated document will be presented when the committee meets in June. (D. Chandra, VNTSC)
- **Simulator Fidelity:** A paper written by Volpe researchers has been accepted for presentation at the American Institute of Aeronautics and Astronautics Motion Perception and Cueing Session to be held in Denver, CO. The paper focuses on the effect of motion cueing on commuter airline pilot training, and evaluation of engine failures on take-off using an FAA qualified Level C simulator with a wide field-of-view cross-cockpit visual system. The paper to be presented is *The Effect of Simulator Motion on Pilot Training and Evaluation*, by Go, T., Burki-Cohen, J., and Soja, N.N. (J. Burki-Cohen, VNTSC)

- **Air Carrier Aviation Security Laboratory Tour:** Personnel from the Aviation Security Human Factors Program (AAR-510) briefed air carrier representatives from Alaska Airlines and Northwest Airlines on new security technologies and human factors interventions. AAR-510 provided a tour of the Aviation Security Laboratory (ASL) facilities to the representatives and they also took part in a hands-on question and answer session. Great interest was expressed in initial field testing of new technologies (e.g., 3-dimensional x-ray systems) at the test beds at Seattle-Tacoma International Airport and the Detroit-Wayne County Airport. (G. Embrey, AAR-3)
- **Construction Guidelines Meeting:** Personnel from the Aviation Security Human Factors Program (AAR-510) participated in the Construction Guidelines Meeting held at the William J. Hughes Technical Center. The meeting provided an overview of the work being conducted at Detroit Metropolitan Wayne County Airport, in conjunction with Northwest Airlines. (G. Embrey, AAR-3)
- **Aviation Security Human Factors Program:** Personnel from the Aviation Security Human Factors Program (AAR-510) met with Jay Dombrowski, Northwest Airlines Security Manager, to discuss the current grant. Discussions included team training, SME panel for architectural review, and SME panel for team training. A meeting will take place next month for an update. (G. Embrey, AAR-3)
- **Checkpoint Vision Meeting:** Representatives of the Aviation Security Human Factors Program (AAR-510) participated in the future checkpoint vision meeting held at the ASL. Participants included architects, designers, researchers, air carriers, and airport operations personnel. The group is working to develop long-range design standards for new security checkpoint construction over the next 50 years. A preliminary report is expected in early summer. (G. Embrey, AAR-3)
- **International Aviation Security Human Factors Technical Advisory Group:** A representative of the Aviation Security Human Factors Program (AAR-510) is working with the chairperson of the International Aviation Security Human Factors Technical Advisory Group (IASHFTAG) to coordinate the fall 2000 meeting. The IASHFTAG supports collaborative human factors research on security issues, and participants include the United Kingdom, Belgium, the Netherlands, France, Canada, Germany, Norway, Sweden, Spain, and New Zealand. The fall 2000 meeting is being planned in conjunction with Alaska Airlines and will be held in Seattle, Washington. (G. Embrey, AAR-3)
- **Improvised Explosives Device Recognition Training:** On March 17, a representative of the Aviation Security Human Factors Program (AAR-510) met with Galaxy Scientific Corporation to kick off the task for improvised explosives device recognition training for cargo screeners. (G. Embrey, AAR-3)
- **Selection Test Data Collection:** Representatives of the Aviation Security Human Factors Program (AAR-510) are involved in field data collection efforts at Seattle-Tacoma International Airport (SEA). This effort is designed to generate and collect biographic and performance data of new x-ray checkpoint screeners. The data will be used to determine the validity, reliability, and efficacy of commercially available psychometric tests for screener

selection. Improved screener selection tools will ensure that potential job candidates possess the requisite skills for successful checkpoint threat detection performance. (G. Embrey, AAR-3)

- **Checkpoint of the Future Architecture Meeting:** On March 15, Michael Snyder (AAR-510) attended a Checkpoint of the Future architecture meeting at the ASL. The attendees included personnel from two major airlines, architects, Aviation Security Human Factors Program staff, ACP-400, and a human factors consultant. The meeting was held to discuss current projects at Dallas/Fort Worth International Airport (DFW), Detroit Metropolitan Wayne County International Airport, Hartsfield Atlanta International Airport, and Seattle-Tacoma International Airport. The meeting also assisted architects in planning equipment needs for a future checkpoint and other issues that must be addressed (e.g., near-term policy changes, electromagnetic interference, airline concerns, and human factors concerns). (G. Embrey, AAR-3)
- **Airport Security Construction Guidelines:** AAR-510 coordinated a Checkpoint Subcommittee meeting at the William J. Hughes Technical Center. The subcommittee consists of architects, airport planners, equipment vendors, human factor specialists, and air carrier representatives. Current and advanced checkpoint concepts were discussed, and the group was provided a first-hand look at emerging equipment. The Checkpoint Subcommittee was established to review, revise, and/or develop the section on checkpoints in the document entitled "Recommended Security Guidelines for Airport Planning, Design, and Construction." (G. Embrey, AAR-3)

*More information on human factors research can be found at the FAA Human Factors (AAR-100) web site <http://www.hf.faa.gov>*

Mark Rodgers  
FAA (AAR-100)



**April 1-6, 2000-** Conference on Human Factors in Computing Systems, “CHI 2000”, The Hague, The Netherlands <http://www.acm.org/sigchi/chi2000> e-mail: [CHI2000-office@acm.org](mailto:CHI2000-office@acm.org)

**April 11-13, 2000-** Advances in Aviation Safety Conference and Exposition, Adams Mark Hotel, Daytona Beach, FL <http://www.sae.org/calendar/aas00tag.htm> email: [jimb@sae.org](mailto:jimb@sae.org)

**April 24-28, 2000-** *FAA/Eurocontrol Action Plan 5 Technical Meeting on Operational Concept Validation, FAA William J. Hughes Technical Center, Atlantic City, NJ* e-mail: [Paul.Krois@faa.gov](mailto:Paul.Krois@faa.gov)

**April 25–27, 2000-** 45th Corporate Aviation Safety Seminar (CASS), The Adam’s Mark Hotel, San Antonio, TX [http://www.flightsafety.org/cass00\\_cfp.html](http://www.flightsafety.org/cass00_cfp.html)

**May 9-10, 2000-** *InterAgency Integrated Product Team Technical Meeting on Human Factors in Acquisition, FAA Headquarters, Washington, DC* e-mail: [Paul.Krois@faa.gov](mailto:Paul.Krois@faa.gov)

**May 9-11, 2000-** General Aviation Technology Conference and Exposition, Century II Convention Center, Wichita, KS <http://www.sae.org/calendar/gat00/index.htm>

**May 10-12, 2000-** 3rd International Conference on Nonlinear Problems in Aviation and Aerospace, Daytona Beach, FL <http://students.db.erau.edu/~siva/conference.html>

**May 15-18, 2000-** 4<sup>th</sup> Joint DOD/FAA/NASA Conference on Aging Aircraft, St. Louis, MO <http://www.aging2000.com>

**May 22-25, 2000-** *The Future of Free Flight NASA Distributed Air/Ground Workshop, NASA Ames Research Center, Moffett Field, CA* <http://www.asc.nasa.gov/aatt> e-mail: [aboyle@mail.arc.nasa.gov](mailto:aboyle@mail.arc.nasa.gov)

**May 23-26, 2000-** *FAA Eurocontrol Action Plan 6 Technical Meeting on Departure Clearances, Amsterdam, Netherlands* e-mail: [Paul.Krois@faa.gov](mailto:Paul.Krois@faa.gov)

**June 6-8, 2000-** Digital Human Modeling for Design and Engineering (DHM) Conference and Exposition, Hyatt Regency, Dearborn, MI <http://www.sae.org/calendar/dhm00/index.htm>

**June 13-16, 2000-** 3<sup>rd</sup> International Air Traffic Management R&D Seminar, “ATM-2000”, Napoli, Italy <http://atm-seminar-2000.eurocontrol.fr>

**June 20-22, 2000-** Threats, Countermeasures, and Situational Awareness: Teaming for Survivability, The Virginia Beach Pavilion and Convention Center, Virginia Beach, VA [http://corp-nt20.nawcad.navy.mil/nawcad/news/sit\\_aware/2000/](http://corp-nt20.nawcad.navy.mil/nawcad/news/sit_aware/2000/)

**July 30 – August 4, 2000-** 14th Triennial Congress of the International Ergonomics Association and the Human Factors and Ergonomics Society 44rd Annual Meeting “IEA 2000/HFES 2000”,

San Diego Marriott Hotel and Marina, San Diego, CA <http://iea2000.hfes.org/>

**August 27-September 1, 2000-** 22<sup>nd</sup> International Council of the Aeronautical Sciences (ICAS) Congress, Harrogate, UK <http://www.aiaa.org/calendar/icas00cfp.html>

**October 10-12, 2000-** World Aviation Congress and Exposition, Town and Country Hotel, San Diego, CA <http://www.sae.org/calendar/wac00/index.htm>

**October 15-19, 2000-** Human Performance, Situation Awareness & Automation: User-Centered Design for a New Millennium, Marriott Riverfront, Savannah, GA  
<http://www.ie.msstate.edu/hpsaa/index.html>

*Note: Calendar events in Italics are new since the last Newsletter*



Comments or questions regarding this newsletter?  
Please contact Shannon Hower at (202) 863-2680  
or via e-mail at [shower@jil.com](mailto:shower@jil.com).